

**Abstract**

Gas-assisted etching (GAE) for integrated circuit dies is enhanced via a method and system that enable halide-assisted etching of dies having copper material. According to an example embodiment of the present invention, an integrated circuit die having copper is  
5 etched using a focused ion beam (FIB) and a halide etch gas, such as chlorine. A selected amount of oxygen-containing gas is supplied to the die to react with the halide and prevent the corrosion of exposed copper material in the die. In this manner, the benefits of halide-assisted etching are realized while inhibiting the corrosion of copper that typically occurs with integrated circuit dies having copper material.